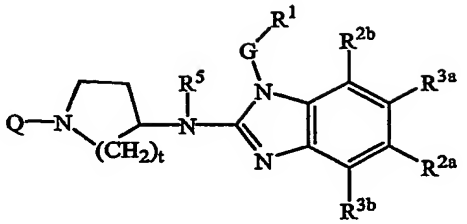
Claims

1. A compound of formula (I)



(I)

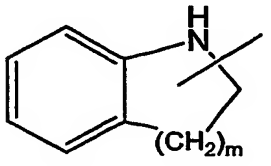
a prodrug, *N*-oxide, addition salt, quaternary amine, metal complex or stereochemically isomeric form thereof wherein

Q is C_{1-6}alkyl optionally substituted with one or more substituents each independently selected from the group consisting of trifluoromethyl, C_{3-7}cycloalkyl, Ar^2, hydroxy, C_{1-4}alkoxy, C_{1-4}alkylthio, Ar^2-oxy-, Ar^2-thio-, $Ar^2(CH_2)_n$oxy, $Ar^2(CH_2)_n$thio, hydroxycarbonyl, aminocarbonyl, C_{1-4}alkylcarbonyl, Ar^2carbonyl, C_{1-4}alkoxycarbonyl, $Ar^2(CH_2)_n$carbonyl, aminocarbonyloxy, C_{1-4}alkylcarbonyl-oxy, Ar^2carbonyloxy, $Ar^2(CH_2)_n$carbonyloxy, C_{1-4}alkoxycarbonyl$(CH_2)_n$oxy, mono- or di(C_{1-4}alkyl)aminocarbonyl, mono- or di(C_{1-4}alkyl)aminocarbonyloxy, aminosulfonyl, mono- or di(C_{1-4}alkyl)aminosulfonyl or a heterocycle selected from the group consisting of pyrrolidinyl, pyrrolyl, dihydropyrrolyl, imidazolyl, triazolyl, piperidinyl, homopiperidinyl, piperazinyl, pyridyl and tetrahydro-pyridyl, wherein each of said heterocycle may optionally be substituted with oxo or C_{1-6}alkyl; or Q is C_{1-6}alkyl substituted with two substituents wherein one substituent is selected from the group consisting of amino, mono- and diC_{1-4}alkyl-amino and Ar^2-C_{1-4}alkylamino and the other substituent is selected from the group consisting of carboxyl, C_{1-6}alkyloxycarbonyl, Ar^2-C_{1-4}alkyloxycarbonyl, aminocarbonyl and aminosulfonyl;

G is a direct bond or C_{1-10}alkanediyl optionally substituted with one or more substituents independently selected from the group consisting of hydroxy, C_{1-6}alkyloxy, Ar^1C_{1-6}alkyloxy, C_{1-6}alkylthio, Ar^1C_{1-6}alkylthio, HO(-CH_2-CH_2-O)$_n$-, C_{1-6}alkyloxy(-CH_2-CH_2-O)$_n$- and Ar^1C_{1-6}alkyloxy(-CH_2-CH_2-O)$_n$-;

R^1 is Ar^1 or a monocyclic or bicyclic heterocycle being selected from piperidinyl, piperazinyl, pyridyl, pyrazinyl, pyridazinyl, pyrimidinyl, furanyl, tetrahydro-furanyl, thienyl, pyrrolyl, thiazolyl, oxazolyl, imidazolyl, isothiazolyl, pyrazolyl, isoxazolyl, oxadiazolyl, quinolinyl, quinoxalinyl, benzofuranyl, benzothienyl, benzimidazolyl, benzoxazolyl, benzthiazolyl, pyridopyridyl, naphthiridinyl,

1*H*-imidazo[4,5-b]pyridinyl, 3*H*-imidazo[4,5-b]pyridinyl, imidazo[1,2-a]-pyridinyl, 2,3-dihydro-1,4-dioxino[2,3-b]pyridyl or a radical of formula



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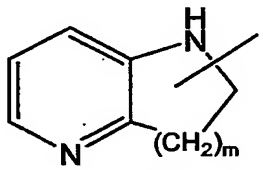

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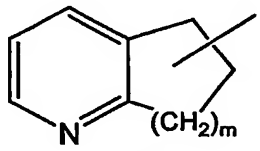

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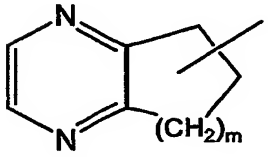

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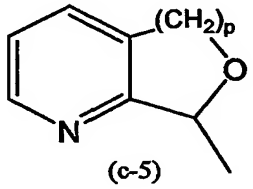

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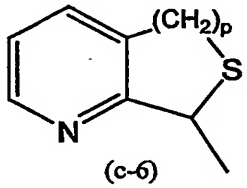

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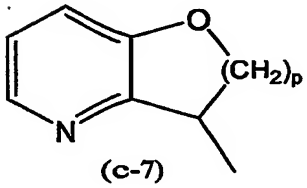

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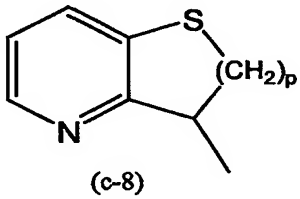


(c-8)

;

wherein each of said monocyclic or bicyclic heterocycles may optionally be substituted with 1 or where possible more, such as 2, 3, 4 or 5, substituents individually selected from the group of substituents consisting of halo, hydroxy, amino, cyano, carboxyl, C_{1-6}alkyl, C_{1-6}alkyloxy, C_{1-6}alkylthio, C_{1-6}alkyloxyC_{1-6}alkyl, Ar^1, Ar^1C_{1-6}alkyl, Ar^1C_{1-6}alkyloxy, hydroxyC_{1-6}alkyl, mono-or di(C_{1-6}alkyl)amino, mono-or di(C_{1-6}alkyl)aminoC_{1-6}alkyl, polyhaloC_{1-6}alkyl, C_{1-6}alkylcarbonylamino, C_{1-6}alkyl-SO_2-NR^{4a}-, Ar^1-SO_2-NR^{4a}-, C_{1-6}alkyloxycarbonyl, -C(=O)-$NR^{4a}R^{4b}$, HO(-CH_2-CH_2-O)$_n$-, halo(-CH_2-CH_2-O)$_n$-, C_{1-6}alkyloxy(-CH_2-CH_2-O)$_n$-, Ar^1C_{1-6}alkyloxy(-CH_2-CH_2-O)$_n$- and mono-or di(C_{1-6}alkyl)amino(-CH_2-CH_2-O)$_n$-;

each n independently is 1, 2, 3 or 4;

one of R^{2a} and R^{3a} is C_{1-6}alkyl and the other one of R^{2a} and R^{3a} is hydrogen;

in case R^{2a} is different from hydrogen then R^{2b} is hydrogen or C_{1-6}alkyl, and R^{3b} is hydrogen;

in case R^{3a} is different from hydrogen then R^{3b} is hydrogen or C_{1-6}alkyl, and R^{2b} is hydrogen; or

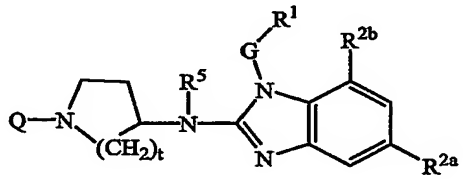
R^{3b} is C_{1-6}alkyl; and R^{3a}, R^{2a}, R^{2b} all are hydrogen; or

R^{2b} is C_{1-6}alkyl; and R^{3a}, R^{2a}, R^{3b} all are hydrogen;

R^{4a} and R^{4b} can be the same or can be different relative to one another, and are each independently hydrogen or C_{1-6}alkyl; or

R^{4a} and R^{4b} taken together may form a bivalent radical of formula $-(CH_2)_s-$;
R^5 is hydrogen or C_{1-6}alkyl;
m is 1 or 2;
p is 1 or 2;
s is 4 or 5;
t is 1, 2 or 3;
Ar^1 is phenyl or phenyl substituted with 1 or more, such as 2, 3 or 4, substituents selected from halo, hydroxy, C_{1-6}alkyl, hydroxyC_{1-6}alkyl, polyhaloC_{1-6}alkyl, and C_{1-6}alkyloxy;
Ar^2 is phenyl or phenyl substituted with 1 or more, such as 2, 3 or 4, substituents selected from the group consisting of halo, hydroxy, amino, cyano, C_{1-6}alkyl, hydroxyC_{1-6}alkyl, polyhaloC_{1-6}alkyl, aminoC_{1-6}alkyl, C_{1-6}alkyloxy, aminosulfonyl, aminocarbonyl, hydroxycarbonyl, C_{1-4}alkylcarbonyl, mono- or di(C_{1-4}alkyl)amino, mono- or di(C_{1-4}alkyl)aminocarbonyl, mono- or di(C_{1-4}alkyl)aminosulfonyl, mono- or di(C_{1-4}alkyl)aminoC_{1-6}alkyl and C_{1-4}alkoxycarbonyl.

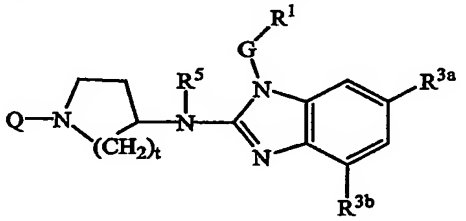
2. A compound as claimed in claim 1, wherein the compound has the formula



(I-a)

wherein Q, t, R^5, G and R^1 are as claimed in claim 1; and
R^{2a} is C_{1-6}alkyl;
R^{2b} is hydrogen or C_{1-6}alkyl.

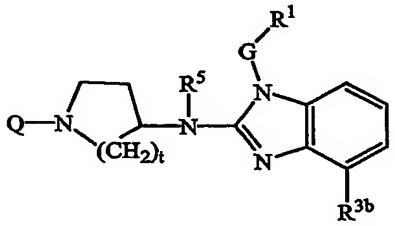
3. A compound as claimed in claim 1, wherein the compound has the formula



(I-b)

wherein Q, t, R^5, G and R^1 are as claimed in claim 1; and
R^{3a} is C_{1-6}alkyl;
R^{3b} is hydrogen or C_{1-6}alkyl.

4. A compound as claimed in claim 1, wherein the compound has the formula



(I-c)

wherein Q, t, R^5, G and R^1 are as claimed in claim 1; and
R^{3b} is C_{1-6}alkyl.

5. A compound as claimed in any of claims 1 to 4 wherein t is 2.

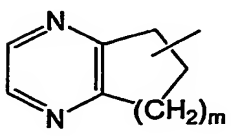
6. A compound as claimed in any of claims 1 to 5 wherein G is C_{1-10}alkanediyl.

7. A compound according to in any of claims 1 - 5, wherein G is methylene.

8. A compound according to any of claims 1 - 7, wherein R^1 is pyridyl optionally substituted with 1 or 2 substituents independently selected from the group consisting of halo, hydroxy, amino, cyano, carboxyl, C_{1-6}alkyl, C_{1-6}alkyloxy, C_{1-6}alkylthio, C_{1-6}alkyloxyC_{1-6}alkyl, Ar^1, Ar^1C_{1-6}alkyl, Ar^1C_{1-6}alkyloxy, hydroxyC_{1-6}alkyl, mono-or di(C_{1-6}alkyl)amino, mono-or di(C_{1-6}alkyl)amino-C_{1-6}alkyl, polyhaloC_{1-6}alkyl, C_{1-6}alkylcarbonylamino, C_{1-6}alkyl-SO_2-NR^{4a}-, Ar^1-SO_2-NR^{4a}-, C_{1-6}alkyloxycarbonyl, -C(=O)-$NR^{4a}R^{4b}$, HO(-CH_2-CH_2-O)$_n$-, halo(-CH_2-CH_2-O)$_n$-, C_{1-6}alkyloxy(-CH_2-CH_2-O)$_n$-, Ar^1C_{1-6}alkyloxy(-CH_2-CH_2-O)$_n$- and mono-or di(C_{1-6}alkyl)amino(-CH_2-CH_2-O)$_n$-.

9. A compound according to any of claims 1 - 7, wherein R^1 is pyridyl substituted with 1 or 2 substituents independently selected from the group consisting of hydroxy and C_{1-6}alkyl.

10. A compound according to any of claims 1 - 7, wherein R^1 is Ar^1, quinolinyl, benzimidazolyl, a radical of formula



(c-4)

or pyrazinyl; wherein each of the radicals Ar^1, quinolinyl, benzimidazolyl, (c-4), or pyrazinyl may optionally be substituted with the substitutents of said radicals as claimed in claim1.

11. A compound according to any of claims 1 - 7, wherein R^1 is phenyl optionally substituted with one, two or three radicals selected from the group consisting of halo, hydroxy, C_{1-6}alkyl, C_{1-6}alkyloxy; quinolinyl; a radical (c-4) wherein m is 2, optionally substituted with up to two radicals selected from C_{1-6}alkyl; benzimidazolyl optionally substituted with C_{1-6}alkyl; pyrazinyl optionally substituted with up to three radicals selected from C_{1-6}alkyl.

12. A compound according to any of claims 1 - 11, wherein R^5 is hydrogen.

13. A compound according to any of claims 1 - 12, wherein Q is C_{1-6}alkyl optionally substituted with one or two substituents each independently selected from trifluoromethyl, C_{3-7}cycloalkyl, Ar^2, hydroxy, C_{1-4}alkoxy, Ar^2-oxy-, $Ar^2(CH_2)_n$oxy, hydroxycarbonyl, aminocarbonyl, C_{1-4}alkylcarbonyl, C_{1-4}alkoxy-carbonyl, aminocarbonyloxy, $Ar^2(CH_2)_n$carbonyloxy, C_{1-4}alkoxycarbonyl-$(CH_2)_n$oxy, mono- or di(C_{1-4}alkyl)aminocarbonyl, aminosulfonyl, mono- or di(C_{1-4}alkyl)aminosulfonyl or a heterocycle selected from pyrrolidinyl, pyrrolyl, dihydropyrrolyl, imidazolyl, triazolyl, piperidinyl, homopiperidinyl, piperazinyl and tetrahydropyridyl, wherein each of said heterocycle may optionally be substituted with oxo or C_{1-6}alkyl; or Q is C_{1-6}alkyl substituted with two substituents wherein one substituent is selected from amino and the other substituent is selected from carboxyl and C_{1-6}alkyloxycarbonyl;

14. A compound according to any of claims 1 - 12, wherein Q is C_{1-6}alkyl optionally substituted with one or two substituents each independently selected from aminocarbonyl, C_{1-4}alkoxycarbonyl, aminocarbonyloxy, $Ar^2(CH_2)_n$carbonyloxy, mono- or di(C_{1-4}alkyl)aminocarbonyl, aminosulfonyl, mono- or di(C_{1-4}alkyl)aminosulfonyl, pyrrolidinyl, dihydropyrrolyl, piperidinyl, homopiperidinyl and tetrahydropyridyl; or Q is C_{1-6}alkyl substituted with two substituents wherein one substituent is amino and the other substituent is selected from carboxyl and C_{1-6}alkyloxycarbonyl.

15. A compound according to any of claims 1 - 12, wherein Q is C_{1-6}alkyl optionally substituted with one substituent selected from aminocarbonyl, C_{1-4}alkoxy-carbonyl, aminocarbonyloxy, $Ar^2(CH_2)_n$carbonyloxy, mono- or di(C_{1-4}alkyl)-aminocarbonyl, aminosulfonyl, mono- or di(C_{1-4}alkyl)aminosulfonyl, pyrrolidinyl, dihydropyrrolyl, piperidinyl, homopiperidinyl and tetrahydropyridyl, and optionally with a second substituent which is hydroxy or Q is C_{1-6}alkyl

substituted with two substituents wherein one substituent is amino and the other substituent is selected from carboxyl and C_{1-6}alkyloxycarbonyl.

16. A compound according to any of claims 1 - 12, wherein Q is C_{1-6}alkyl substituted with aminocarbonyl, C_{1-4}alkoxycarbonyl, aminocarbonyloxy, mono- or di(C_{1-4}alkyl)aminocarbonyl, aminosulfonyl, mono- or di(C_{1-4}alkyl)aminosulfonyl, pyrrolidinyl, dihydropyrrolyl, piperidinyl, homopiperidinyl or tetrahydropyridyl.

17. A compound as claimed in any one of claims 1 to 16 for use as a medicine.

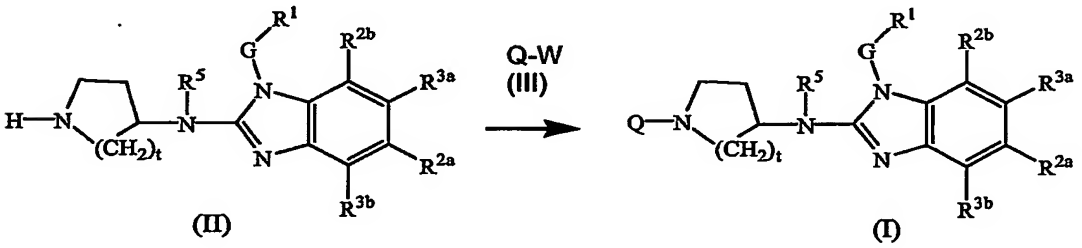
18. A pharmaceutical composition comprising a pharmaceutically acceptable carrier, and as active ingredient a therapeutically effective amount of a compound as claimed in any one of claims 1 to 16.

19. A process for preparing a pharmaceutical composition as claimed in claim 18, said process comprising intimately mixing a pharmaceutically acceptable carrier with a therapeutically effective amount of a compound as claimed in any one of claims 1 to 16.

20. The use of a compound as claimed in any of claims 1 to 16 for the manufacture of a medicament for inhibiting RSV replication.

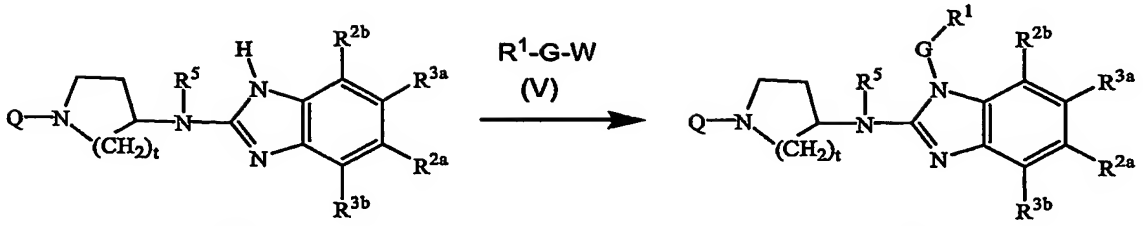
21. A process for preparing a compound as claimed in any of claims 1 to 23, said process comprising

(a) reacting an intermediate of formula (II) with a reagent (III) as in the following reaction scheme:



(II) (I)

(b) reacting an intermediate of formula (IV) with a reagent (V) as in the following reaction scheme:



(IV) (I)

wherein Q, G, t, R^1, R^{2a}, R^{2b}, R^{3a}, R^{3b}, R^5 are as claimed in any of claims 1 to 16; and optionally converting the thus obtained compounds of formula (I) into their pharmaceutically acceptable base-addition or acid addition salt form by treatment with a suitable base or acid and conversely treating the base-addition or acid addition salt form with an acid or a base to obtain the free form of the compound of formula (I).